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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/830,151	04/23/2004	Yoshiyuki Sasaki	R2184.0313/P313	7835
24998	7590	06/28/2007		
DICKSTEIN SHAPIRO LLP 1825 EYE STREET NW Washington, DC 20006-5403			EXAMINER SHEN, KEZHEN	
			ART UNIT 2609	PAPER NUMBER
			MAIL DATE 06/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/830,151

Applicant(s)

SASAKI, YOSHIYUKI

Examiner

Kezhen Shen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                 | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 13 and 26 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 13 and 26 both use the phrase "does not have to be, but may also be" which does not clearly point out the function of the apparatus.

Claims 14-25 and 27-42 are also rejected for being dependent upon rejected based claims.

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 13-25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

- a. Claim 13 recites "a program...", which qualifies as functional descriptive subject matter. However, by itself is non-statutory because without a computer-readable medium, the computer program's functionality cannot be realized. (Interim Guidelines, Annex IV).

b. Claims 14-24 are dependent on claim 13 and fail to remedy the realizable aspect of the program as claimed. Hence, they are also rejected.

To correct this, claim 13 should incorporate claim 25 to make the program realizable.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-5 and 26-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Imai et al. US 6,587,415 B1

Regarding claim 1, Imai et al. teach an information reproduction method for reproducing contents of an information recording medium (Imai et al., "Summary of the Invention", also Col 1 Line 21-23 a disk) that has at least one data zone for storing data (Imai et al. Col 1 Line 21-23 a sector being a data unit on a disk), comprising of a non-recorded zone determination step for determining whether the entirety of a reproduction zone is a recorded zone wherein data are stored, or whether at least a part of the reproduction zone is a non-recorded zone wherein no data are stored (Imai et al. Col 1

Line 38-42 a validation of the written/blank status of a sector) at a predetermined timing when or after a request for reproduction is received (Imai et al. Col 1 Line 13-20 a blank check is performed simultaneously by the identifying means when the read data is decoded), the reproduction zone having contents which are requested to be reproduced by the reproduction request (Imai et al. Col 8 Line 48-55 a read or verify command relating to information readout from the host computer is issued, the processing of the controller controls the various parts to begin readout of the desired sector), and being included in the data zone of the information recording medium (Imai et al. Col 8 Line 52-55 sector from the disk).

Regarding claim 2, Imai et al. teach the information reproduction method as claimed in claim 1, wherein the predetermined timing is set at a point in time when the reproduction request is received (Imai et al. Col 2 Line 13-20 a blank check is performed simultaneously by the identifying means when the read data is decoded).

Regarding claim 3, Imai et al. teach the reproduction method as claimed in claim 2, further comprising of an error processing step for outputting error information without reproducing the non-recorded zone when the non-recorded zone is determined to be present in the reproduction zone at the non-recorded zone determination step (Imai et al. Col 8 Line 29-41 the written or blank result is sent to the interrupt controller to perform various error controls and relied to the controller. If the identification result of written/blank is blank then an interrupt signal is sent to the ECC processing to stop).

Regarding claim 4, Imai et al. teach the reproduction method as claimed in claim 1, wherein the predetermined timing is set at a point in time when reproduction data are not obtained normally while reproducing the reproduction zone (Imai et al. Fig. 5 the read/verify processing with blank check is processed before the sector read start).

Regarding claim 5, Imai et al. teach the reproduction method as claimed in claim 4, further comprising of an error processing step for outputting error information without retrying reproduction of the non-recorded zone when the non-recorded zone is determined to be present in the reproduction zone at the non-recorded zone determination step (Imai et al. Col 8 Line 29-41 the written or blank result is sent to the interrupt controller to perform various error controls and relied to the controller. If the identification result of written or blank is blank then an interrupt signal is sent to the ECC processing to stop).

Regarding claim 26 Imai et al. teach a drive apparatus (Imai et al. Fig. 1, Col. 4 Line 47 Drive Unit) capable of at least reproducing data by irradiating a light beam to an information recording medium (Imai et al. Col 3 Line 12-15 by irradiating it with reproducing laser power) that has at least one data zone for storing data (Imai et al. Col 3 Line 37-38 user data is recorded in recording/reproduction sector units), which drive apparatus does not have to be, but may also be capable of writing and erasing data (Imai et al. Col 5 Line 20-23 a laser output is obtained from the optical pickup in reproduction, recording and erasing), comprising of a non-recorded zone determination means for determining whether data are recorded in the entirety of a reproduction zone, contents of which are requested for reproduction, or the reproduction zone contains a

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non-recorded zone where data are not recorded (Imai et al. Col 1 Line 38-42 a validation of the written/blank status of a sector), the reproduction zone being included in the data zone of the information recording medium (Imai et al. Col 1 Line 21-24 a sector being a data unit on a disk), and the non-recorded zone determination being carried out at a predetermined timing on or after a point in time when the reproduction request is received (Imai et al. Col 1 Line 13-20 a blank check is performed simultaneously by the identifying means when the read data is decoded), an optical pickup apparatus for receiving the light irradiated to and reflected from the information recording medium (Imai et al. 7 of Fig. 1, Col 4 Line 57-60 an optical pickup) and a processing apparatus (Imai et al. 2 of Fig. 1, Col 5 Line 5 drive controller) for at least reproducing data using an output signal of the optical pickup apparatus (Imai et al. Col 5 Line 5-6 controls various parts for recording and reproduction based on instructions from controller), which processing apparatus does not have to be, but may also be capable of writing and erasing data (Imai et al. Col 5 Line 16-21 controller specifies light emission and timing to LPC4 so the laser output is obtained in reproduction, recording and erasing).

Regarding claim 27, the limitations as claimed have been analyzed and rejected with respect to claim 2 above.

Regarding claim 28, the limitations as claimed have been analyzed and rejected with respect to claim 3 above.

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Regarding claim 29, the limitations as claimed have been analyzed and rejected with respect to claim 4 above.

Regarding claim 30, the limitations as claimed have been analyzed and rejected with respect to claim 5 above.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 6-12 and 31-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai et al. US 6,587,415 B1 as applied to claim 1 above, and further in view of Udagawa 5,920,526.

Regarding claim 6, Imai et al. fail to teach the reproduction method as claimed in claim 1, further comprising of a boundary determination step for determining whether information about a boundary between the recorded zone and the non-recorded zone

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has been obtained, the boundary determination step being performed in advance of the non-recorded zone determination step, and the non-recorded zone determination step being performed only when the boundary determination step determines that the information about the boundary has not been obtained. However, Udagawa does.

Udagawa teaches a boundary determination step for determining whether information about a boundary between the recorded zone and the non-recorded zone has been obtained (Udagawa Col 2 Line 25-32 RF signals reproduced from the write-once optical disc are detected during track jump in order to detect the boundary between a recorded area and an unrecorded area on the once-write optical disc).

Therefore teachings of Imai et al. and Udagawa as a whole would have rendered obvious the boundary determination step as claimed for the benefit of determining the boundary between the recording area and non-recording area without waiting for reproduction requests. It would have been obvious to one of ordinary skill in the art to place the boundary determination step being performed in advance of the non-recorded zone determination step for the benefit of determining the recording/non-recording status of data within a set area without having to produce a reproduction request. It would also be obvious to one of ordinary skill in the art to perform the non-recorded zone determination step only when the boundary determination step determines that the information about the boundary has not been obtained for the benefit of finding the non-recorded zone when the boundary determination cannot determine the boundary location.

Udagawa teaches the reproduction method, further comprising of a boundary setting step wherein a start address (Udagawa Col 6 Line 40-44 address value of the

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leading end of the area) of the non-recorded zone of the reproduction zone is made into the address of the boundary between the recorded zone and the non-recorded zone (Udagawa Col 6 Line 40-44 if the current position is not pre-recorded, the address value of the current position is stored in the memory as being the address value of the trailing end of the area under retrieval).

Therefore teachings of Imai et al. and Udagawa as a whole would have rendered obvious the update of the start address for the boundary between the recorded and non-recorded zone for the benefit of maintaining an updated address of the boundary zone. It would have been obvious to one of ordinary skill in the art to update start address of the boundary zone when the non-recorded zone is determined to be present in the reproduction zone at the non-recorded zone determination step for the benefit of claim 1, further comprising of a confirmed non-recorded zone updating step wherein a start address of a zone that has been confirmed as a non-recorded zone is updated if it would of also been obvious to one of ordinary skill in the art to update the start address of the boundary zone when the start address of the non-recorded zone differs from the address of the confirmed non-recorded zone. However Udagawa does.

Udagawa teaches the reproduction method as claimed in claim 1, further comprising of a confirmed non-recorded zone updating step wherein a start address

(Udagawa Col 1 Line 56 the start address) of a zone that has been confirmed as a non-recorded zone (Udagawa Col 1 Line 55-59 the start and end address of the data recorded in the PMA area help define a unrecorded area in the PMA so that data may be written to this unrecorded area) is updated if a start address of a non-recorded zone of the reproduction zone is less than the start address of the confirmed non-recorded zone (Udagawa Col 6 Line 50-60 the current position of the optical pickup is more

outward than the leading end of the area under retrieval. If it is found in this manner that the current position of the optical pickup is more outward than the leading end of the area under retrieval, control shifts the current address value as the address value of the leading end of the area under retrieval).

Therefore the teachings of Imai et al. and Udagawa as a whole would have rendered obvious the non-recorded zone updating step for the benefit of updating the start address of the non-recorded zones during reproduction.

Regarding claim 9, Imai et al. teach the reproduction method as claimed in claim 8, further comprising of a confirmed non-recorded zone determination step for determining whether at least a part of the reproduction zone is included in the confirmed non-recorded zone (Imai et al. Col 1 Line 38-42 a validation of the written/blank status of a sector) and an error setting step for outputting error information without reproducing the zone included in the confirmed non-recorded zone when at least a part of the reproduction zone is determined to be included in the confirmed non-recorded zone at the confirmed non-recorded zone determination step (Imai et al. Col 8 Line 29-41 the written or blank result is sent to the interrupt controller to perform various error controls and relied to the controller. If the identification result of written/blank is blank then an interrupt signal is sent to the ECC processing to stop).

However, Imai et al. fail to teach the confirmed non-recorded zone determination step is performed in advance of the non-recorded zone determination step. Official Notice is taken that both the concept and advantage of confirming non-recorded zone determination step is performed in advance of the non-recorded zone determination

step are notoriously well known and expected in the art, and therefore would have been obvious to incorporate in Imai for the benefit of having a zone that is confirmed to be non-recorded compared to running the non-recorded zone determination step during the reproduction request.

Regarding claim 10, Imai et al. fail to teach the reproduction method as claimed in claim 1, further comprising of a confirmed recorded zone updating step; wherein an end address of a zone that has been confirmed as a recorded zone is updated if an end address of the reproduction zone, reproduction of which has been normally performed, is greater than the ending address of the confirmed recorded zone. However, Udagawa does.

Udagawa teach the reproduction method as claimed in claim 1, further comprising of a confirmed recorded zone updating step; wherein an end address (Udagawa Col 1 Line 56 the end address) of a zone that has been confirmed as a recorded zone (Udagawa Col 1 Line 55-59 the start and end address of the data recorded in the PMA area help define a unrecorded area in the PMA so that data may be written to this unrecorded area) is updated if an end address of the reproduction zone, reproduction of which has been normally performed, is greater than the ending address of the confirmed recorded zone (Udagawa Col 6 Line 24-31 the current position of the optical pickup is more inward than the trailing end of the area under retrieval. If it is found in this manner that the current position of the optical pickup is more inward than the leading end of the area under retrieval, control shifts the current address value as the address value of the trailing end of the area under retrieval).

Therefore the teachings of Imai et al. and Udagawa as a whole would have rendered obvious the non-recorded zone updating step for the benefit of updating the end address of the non-recorded zones during reproduction.

Regarding claim 11, Imai et al. teach the reproduction method as claimed in claim 10, further comprising of a confirmed recorded zone determination step for determining whether the entirety of the reproduction zone is contained in the confirmed recorded zone (Imai et al. Col 1 Line 38-42 a validation of the written/blank status of a sector), and the non-recorded zone determination step is performed only when at least a part of the reproduction zone is determined not to be contained in the confirmed recorded zone at the confirmed recorded zone determination step (Imai et al. Col 8 Line 29-41 the written or blank result is sent to the interrupt controller to perform various error controls and relied to the controller. If the identification result of written/blank is blank then an interrupt signal is sent to the ECC processing to stop).

However, Imai et al. fail to teach the confirmed non-recorded zone determination step is performed in advance of the non-recorded zone determination step. Official Notice is taken that both the concept and advantage of confirming non-recorded zone determination step is performed in advance of the non-recorded zone determination step are notoriously well known and expected in the art, and therefore would have been obvious to incorporate in Imai for the benefit of having a zone that is confirmed to be non-recorded compared to running the non-recorded zone determination step during the reproduction request.

Regarding claim 12, Imai et al. fail to teach a boundary defining step that is performed if the start address of the confirmed non-recorded zone is the same as the end address of the confirmed recorded zone, wherein the address of the boundary of the recorded zone and the non-recorded zone is defined by the same address.

However, it would have been obvious and expected to one of ordinary skill in the art to define the boundary at same position where both the recorded zone ends and the unrecorded zone starts. Official Notice is taken.

The rest of the limitations as claimed in claim 12, have been analyzed and rejected with respect to claims 8 and 10 above.

Regarding claim 31, the limitations as claimed have been analyzed and rejected with respect to claim 6 above.

Regarding claim 32, the limitations as claimed have been analyzed and rejected with respect to claim 7 above.

Regarding claim 33, the limitations as claimed have been analyzed and rejected with respect to claim 8 above.

Regarding claim 34, the limitations as claimed have been analyzed and rejected with respect to claim 9 above.

Regarding claim 35, Imai et al. teach the drive apparatus as claimed in claim 33, wherein two or more data zones are formed on the recording surface of the information recording medium (Imai et al. Col 2 Line 55-58 the tracks of the disk are comprised of continuous units known as sectors). However, Imai et al. fail to teach the information

about the confirmed non-recorded zone for each data zone is stored in the confirmed non-recorded zone memory (Udagawa Col 1 Line 55-60 the start and end address of the data recorded in the PMA area help define a unrecorded area in the PMA).

However, Udagawa does.

Udagawa teaches the information about the confirmed non-recorded zone for each data zone is stored in the confirmed non-recorded zone memory (Udagawa Col 1 Line 55-60 the start and end address of the data recorded in the PMA area help define a unrecorded area in the PMA).

Therefore teachings of Imai et al. and Udagawa as a whole would have rendered obvious the storing of information of each data zone in memory as claimed for the benefit of faster access to the information pertaining to the address of the non-recorded zone.

Regarding claim 36, the limitations as claimed have been analyzed and rejected with respect to claim 10 above.

Regarding claim 37, the limitations as claimed have been analyzed and rejected with respect to claim 11 above.

Regarding claim 38, the limitations as claimed have been analyzed and rejected with respect to claim 35 above.

Regarding claim 39, the limitations as claimed have been analyzed and rejected with respect to claim 12 above.

Regarding claim 40, the limitations as claimed have been analyzed and rejected with respect to claim 35 above.

Regarding claim 41, Imai et al. teach the drive apparatus as claimed in claim 26, wherein the information recording medium is capable of storing additional information, but does not allow rewriting of data (Imai et al. Col 11 Line 3-8 (Write One Read Many) WORM is a recording media which also can be used).

Regarding claim 42, Imai et al. teach the drive apparatus as claimed in claim 41, wherein the information recording medium is an information recording medium based on the specification of DVD+R (Imai et al. Col 11 Line 3-8 DVD-RAM, DVD-RW, WORM while it is not explicitly stated, DVD+R is a form of WORM and a family of the DVD-RAM and DVD-RW type).

9. Claims 13-17 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai et al. US 6,587,415 B1 and further in view of Hirose US 6,560,170 B2.

Regarding claim 13, Imai et al. teach a non-recorded zone determination step for determining whether the entirety of a reproduction zone is a recorded zone wherein data are stored, or whether at least a part of the reproduction zone is a non-recorded zone wherein no data are stored (Imai et al. Col 1 Line 38-42 a validation of the written/blank status of a sector) at a predetermined timing when or after a request for reproduction is received (Imai et al. Col 1 Line 13-20 a blank check is performed simultaneously by the identifying means when the read data is decoded), the reproduction zone having contents which are requested to be reproduced by the reproduction request (Imai et al. Col 8 Line 48-55 a read or verify command relating to

information readout from the host computer is issued, the processing of the controller controls the various parts to begin readout of the desired sector), and being included in the data zone of the information recording medium (Imai et al. Col 8 Line 52-55 sector from the disk).

Imai et al. fail to teach a program for a control computer of a drive apparatus to execute, the drive apparatus being capable of at least reproducing data stored in an information recording medium that has at least one data zone for storing data, which drive apparatus does not have to be, but may also be capable of writing and erasing data, comprising: a read command monitoring step for monitoring a request for reproduction of a zone (reproduction zone) of the data zone of the information recording medium. However, Hirose does.

Hirose teaches a program (Hirose Col 10 Line 55-56 a program) for a control computer of a drive apparatus to execute (Hirose Col 10 Line 57-60 then reading and executing that program by a microcomputer), the drive apparatus being capable of at least reproducing data stored in an information recording medium (Hirose Col 6 line 23-26 in order to reproduce data, a pick-up irradiates a light beam having a fixed intensity onto a track of the rotating optical disk on which the data to be reproduced are recorded) that has at least one data zone for storing data (Hirose Col 6 Line 24-26 track of the rotating optical disk), which drive apparatus does not have to be, but may also be capable of writing and erasing data, comprising a read command monitoring step for monitoring a request for reproduction of a zone (reproduction zone) of the data zone of the information recording medium (Hirose Fig 2, Col 8 Line 55-61 when an instruction

for performing a track jump has not been given the control unit waits as is, however, when an instruction is performing a track jump has been given the control unit calculates the number of tracks to jump according to track-jump instruction).

Therefore, the teachings of Imai et al. and Hirose as a whole would have rendered obvious the read command monitoring step for the benefit of waiting for an input from the user before beginning the reproduction.

Regarding claim 14, the limitations as claimed have been analyzed and rejected with respect to claim 2 above.

Regarding claim 15, the limitations as claimed have been analyzed and rejected with respect to claim 3 above.

Regarding claim 16, the limitations as claimed have been analyzed and rejected with respect to claim 4 above.

Regarding claim 17, the limitations as claimed have been analyzed and rejected with respect to claim 5 above.

Regarding claim 25, Imai et al. fail to teach a computer-readable recording medium wherein the program as claimed in claim 13 is stored. However, Hirose does.

Hirose teaches a computer-readable recording medium wherein the program as claimed in claim 13 is stored (Hirose Col 10 Line 55-60 by storing a program, which corresponds to the flowchart shown in Fig. 2 on a data recording medium, such as a flexible disk or hard disk and then reading and executing that program by a microcomputer).

Therefore, the teachings of Imai et al. and Hirose as a whole would have rendered obvious the storing of a program on a computer-readable recording medium for the benefit of executing the program on the computer.

10. Claims 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai et al. US 6,587,415 B1 and Hirose US 6,560,170 B2 as applied to claim 13 above, and further in view of Udagawa 5,920,526.

Regarding claim 18, the limitations as claimed have been analyzed and rejected with respect to claim 6 above.

Regarding claim 19, the limitations as claimed have been analyzed and rejected with respect to claim 7 above.

Regarding claim 20, the limitations as claimed have been analyzed and rejected with respect to claim 8 above.

Regarding claim 21, the limitations as claimed have been analyzed and rejected with respect to claim 9 above.

Regarding claim 22, the limitations as claimed have been analyzed and rejected with respect to claim 10 above.

Regarding claim 23, the limitations as claimed have been analyzed and rejected with respect to claim 11 above.

Regarding claim 24, the limitations as claimed have been analyzed and rejected with respect to claim 12 above.

***Examiner's Note***

The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

***Contact***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kezhen Shen whose telephone number is (571) 270-1815. The examiner can normally be reached on Monday - Friday 7:30 am to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on (571) 272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kezhen Shen/

  
**VU LE**  
**SUPERVISORY PATENT EXAMINER**